THE
VETERINARY RECORD.

The Official Journal of the National Veterinary Medical Association of Great Britain and Ireland, Limited.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 26. JULY 1, 1922. VOL. 2.

A Method of Treating Abscesses.*

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(Reprinted from *The Lancet.*)

For the purposes of this paper, may I ask you to imagine the interior of a room to be that of an unopened acute abscess, full of pus at considerable tension. The pus contains multitudes of the organisms that have been instrumental in causing the abscess—it is full, every part being continually in close contact with the pus. The walls, floor, and ceiling are covered with recent granulation tissue, swarming with organisms advancing not only into the walls but also into the tissues around. Somewhere in the room, possibly partially embedded in floor, walls, or ceiling, is the cause of the abscess—a piece of dead bone or a foreign body; or there may be no such definite cause if the abscess had an embolic origin—as in pyæmia—or if it was caused by the penetration of a septic instrument whose path of entry closed over immediately after the infliction of the wound. Outside the walls are the normal tissues of the body where a perpetual battle is going on between organisms which have found their way through the barrier of granulation tissue and a host of leucocytes which Nature has hurried to the spot to combat the invaders.

It is important to bear in mind that in such a case the pus is not the disease, but only the result of the disease which is in active progress in the substance of the walls and in the surrounding tissues.

Low Drainage.

How ought we to deal with an abscess of this kind? It is, I suppose, generally accepted that it should be opened in the most dependent part in order to secure free and efficient drainage. An opening would be made in the floor, or possibly two lateral openings through the walls close to the floor; drainage-tubes would be inserted into these openings and the pus allowed to escape. The walls and the whole interior may be scraped in order to remove the infected granulation tissue, but this practice has been to a great extent given up, for it has been recognised that in the doing of it fresh channels of absorption are opened up and a risk run of extending the infected area. The cavity may be irrigated with an antiseptic solution, but this escapes quite easily through the drainage-tubes.

The result of this drainage is that tension is relieved and the walls of the cavity fall into folds holding in their interstices multitudes of organisms; nothing is done at the time to prevent the spread of organisms from the infected walls into the surrounding tissues. Now and again, it may be once or twice in the 24 hours, a stream of some antiseptic fluid is irrigated into what is left of the cavity but its exit is rendered easy and immediate by the free drainage that has been provided, and it cannot enter into the remote recesses in the walls, which contain soft granulation tissue and pus. Under these circumstances, the patient's temperature falls as the result of the relief of tension, but beyond that the actual cure is left to Nature, aided, it may be, by general constitutional measures directed to increase resistance and strengthen the defending leucocytes against the advancing organisms. In the majority of cases these measures are successful; in the minority they fail, and septicæmia is the result. A foreign body which cannot be removed at the time of the operation remains septic and irritating, causing a persistent sinus which will only close after further measures are taken for its removal.

Opening through the Roof.

Imagine now what happens if, instead of making an opening in the floor or close to the floor, it be made in the ceiling; relief of tension will cause some of the purulent contents of the room to find an exit through this, and the greater part can be evacuated by slight pressure. If through this opening a tube be passed which reaches to the floor, and through this tube antiseptic fluid is poured, the latter will gradually fill the room from floor to ceiling until it emerges by the side of the tube at the wound, mixed at first with what remains of the pus, but after a very brief irrigation what emerges from the wound will be antiseptic only and the cavity will remain full. If left thus the fluid will be continually soaking into the walls, filling up recesses, surrounding a foreign body if present, and subjecting all the interior surfaces to the action of the antiseptic; if undisturbed the process will go on until the virtue of the antiseptic fluid is exhausted, whilst the number of organisms available to permeate the walls will be enormously reduced and the battle of the defending leucocytes rendered much easier.

Artificial Distension to Clean the Abscess Walls.

If the tube which is passed through the ceiling be closed at the end which rests on the floor and has a valve close to the closed end† so arranged that nothing can pass into that end of the tube, and the opening in the ceiling be almost completely closed round the tube, it is possible with the aid of a syringe to distend the cavity almost to the capacity it had when full of pus, thus opening out and exposing to the influence of the antiseptic fluid every nook and cranny in its walls.

The practical application of this method is simple. Take, for example, a case of acute necrosis of bone, almost always due to infection by *Staphylococcus aureus*. Part of a bone

* A paper read at a meeting of the Medical Society of London.

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is probably bared of periosteum and bathed in pus. If a small opening be made in the highest possible position and through a tube arranged as described above small quantities of the most efficient antiseptic (flavine in this particular instance) are injected with a syringe once or twice a day, the quantity used being sufficient to gently distend the cavity, the result is often very extraordinary. The end of the tube may be left protruding through the dressings, for the valve prevents anything escaping through it, and the tube itself will remain full of the antiseptic fluid. It may be that the grip of the small incision will suffice to keep the tube from coming out, but if necessary a lateral stitch through it and one edge of the wound will ensure the lower end of the tube remaining at the deepest part of the cavity. The dressings require very little changing; the original one may be left on several days, and will be continually moistened by the small quantities of antiseptic that come from the wound by the side of the tube. The patient's temperature will fall gradually rather than suddenly, for to a certain extent the tension in the original cavity has been maintained by the injected fluid. If flavine be used, and the dressings changed after three or four days, it often happens that surprisingly little is found on them except antiseptic, the quantity of pus being remarkably small. On withdrawal of the drainage-tube after about five days it will generally be found to bring away with it thick ropy discharge; this is an indication that the antiseptic has done its work and that the cavity is clinically, if not bacteriologically, aseptic.

What has happened to the piece of bare bone under these circumstances? For four or five days it has been continuously soaking in a mixture of flavine, pus, and serum; if the treatment has been successful it, too, has been rendered sterile and harmless, for it is erroneous to suppose that a sequestrum or piece of bone that has been denuded of its periosteum must necessarily cause a permanent sinus. Outside the body a piece of bone, like anything else, can be rendered sterile by soaking in an efficient antiseptic, and it is possible to do this whilst it is still in the body where it can be rendered as harmless and unirritating as a piece of wire or a metal bone-plate.

The principle of this method, then, is this: The abscess is opened at its highest point, the cavity is at intervals filled to its utmost capacity from the bottom upwards with an antiseptic fluid, which remains partially distending it and continually soaking the walls until they are rendered sterile. In all cases where the organism is found to be either a streptococcus or staphylococcus, flavine of the strength 1 in 1,000 is by far the best antiseptic, for it has the great advantage that when mixed with pus or serum it still retains powerful germicidal properties. It is still little or no use in cases of *Bacillus coli* infection or against the tubercle bacillus; for these some other agent is required. The use of flavine should also be limited in time; it will be found to delay healing if kept in contact with normal tissues more than six or seven days. When the interior of the cavity has been rendered comparatively sterile, and the injection of flavine been discontinued, it may be advisable then to make a puncture in the most dependent position, and put in a small drainage tube, in order that the closing up of the cavity may be as rapid as possible.

Comparative Methods.

It will be noticed that there are several very marked differences between this method and that known as the Carrel-Dakin method; in the latter the irrigation is continuous, but the fluid is allowed to flow away as soon as it has been brought into contact with the tissues instead of being kept soaking them under pressure. The openings in the Carrel-Dakin tubes are numerous and extend some distance along the tube; the irrigated fluid will therefore come out of those openings where the resistance is least, and thus the deeper parts of the wound may get no treatment at all. The Carrel-Dakin tubes are apt to be pushed out of the wound, any movement on the part of the patient or any disturbance of the apparatus frequently brings it about that they merely lie flat on the surface of the wound, and if this is to be prevented the patient must be kept in bed and the affected part immobilised, whereas in the method I have described these are not necessary, for the whole of the simple apparatus is moved with the affected part.

That part of this method which aims at keeping the abscess cavity more or less distended with antiseptic fluid in order that this may act upon every part of the wall serves a very useful purpose in the case of tuberculous abscesses.

Treatment of an Ilio-Psoas Abscess.

Take, for instance, the case of an ilio-psoas abscess which has its origin in disease of a dorsal vertebra. Here, I suppose, the usual course is to treat the spinal disease by rest and immobilisation and as far as the abscess is concerned to rely on repeated aspirations, each aspiration followed by the injection of small quantities of fluid or semi-fluid germicide such as bismuth paste or iodoform emulsion, or an open operation, clearing away all the contents and lining of the abscess cavity with immediate closure. In all these nothing very efficient is done to deal locally with the disease in the vertebra, which after all, is the most important part, for if the injected material be semi-solid, none of it will reach the affected bone; if it be fluid, the small quantities generally used may also remain in the abscess cavity and never reach the diseased bone.

If now after such an abscess has been cleared of its liquid contents by aspiration an equal or almost equal quantity of germicidal fluid (made as near in specific gravity as possible to the contents of the abscess) be injected into the cavity, and the patient's position be so arranged that the diseased bone be at the lowest level, the injected fluid will, partly aided by gravity, find its way into every recess that previously held fluid, including the diseased bone, which will thus be kept soaking in the injected fluid.

Iodine in some form is well known to be the most efficient agent in the local treatment of tuberculosis. I have generally used Morton's fluid diluted either once or twice with water or saline solution, according to the size of the cavity, and consequently to the quantity of fluid injected. The appearance of iodine in the urine is a good indication that it does soak into the walls of the cavity; in so doing it must have a very powerful action on bacilli that are present in them. The injection may have to be repeated twice or three times, and eventually what is left of the

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injected fluid may have to be withdrawn, but it is generally absorbed, and is, I am convinced, frequently instrumental in arresting disease in the bone.

Treatment of Cysts.

I would like to mention yet another application of this method—the treatment of cysts; the practice of treating these by tapping and injecting has been greatly replaced by that of open operation—presumably because of the percentages of failures, or only partial successes, obtained by the older method. The reason for these failures is not difficult to see, for when cysts were evacuated of their contents by trocar and cannula the quantity of fluid that was subsequently injected was so small in comparison with what had been removed that it was insufficient to distend the collapsed walls, and so many parts of the latter got little or no treatment; if by manipulation the fluid passed over the whole of the surface its application to each part was so brief that it did not kill the epithelium in every part and recurrences took place at partially treated spots.

Here, again, if after the fluid has been withdrawn an almost equal quantity of irritating fluid be injected, every part of the cavity previously in contact with fluid will have its dose of the remedial agent.

In the case of cysts, such as hydroceles which are lined by a single layer of endothelium, a very brief application of an irritating fluid is sufficient; if a sufficient quantity of iodine solution or carbolic acid be introduced and withdrawn again in ten minutes it will generally be found to have accomplished its object; the treatment, however, is very painful and a general anæsthetic will be necessary. A previous injection of a local anæsthetic, such as novocaine, I have not found sufficient.

"Humane" Slaughtering.

Corporation Liability for By-Laws.

Test Appeal: Bench Decision Reversed.

A test appeal on the operation of by-laws directed towards humane methods in slaughterhouses came before a divisional court of the King's Bench Division (the Lord Chief Justice and Justices Bailhache and Salter) recently.

The appeal was from a decision of the Reading Justices. The appellant, James Dodd, Inspector of Nuisances at Reading, it was stated, had preferred an information against Richard James Venner, Southampton Street, Reading, president of the Reading Butchers' Association and owner of a bacon-curing factory, that he had aided a slaughterman named William Grant "to slaughter a pig without having effectually stunned it with a mechanically-operated instrument suitable and sufficient for the purpose," contrary to By-law No. 9 of the Corporation. The justices had dismissed the case.

Sir John Simon, K.C., supporting the appeal, said the by-law in question was one of the model by-laws issued among corporations by the Ministry of Health and adopted by various bodies. The by-law did not apply to members of the Jewish faith.

The summons against Venner, added counsel, recited that he hoisted a pig by means of a winch and stuck it without any preliminary stunning. The by-laws provided that the mechanical instrument to be used was a pistol or gun by which unconsciousness was first secured. The pistol released a bullet and could only be discharged when pressed against the animal.

The contention for the respondents was that the by-law was unreasonable and *ultra vires* and that it was "repugnant to the laws of England as it was partial and unequal in its operation between the different classes of the community," and the justices had also come to this conclusion. They found that the killing of pigs by hoisting and sticking was not more inhumane than shooting them, and that meat where the animal had been shot was more likely to deteriorate after curing than where the killing was by the process of hoisting and sticking.

Sir J. Simon's Arguments.

Criticising these findings, Sir John argued that the question of the quality of the meat in no way affected the issue as to the reasonableness of the by-law. As for the finding that the hoisting and sticking method was not more inhumane than shooting, it was for the Corporation as a popularly-elected body to form its own judgment as to the methods of killing, and the justices had no function, upon the hearing of a prosecution for breach of the by-law, to review the question of whether it was the best by-law that could be devised for the purpose. As to the suggestion that the by-law was unreasonable because of the provision as to the religious scruples of a certain section of the population, it was recognised that by-laws could contain certain exceptions so long as they were not palpably discriminating between one man and another. He submitted that the justices should have convicted.

Mr. Upjohn, K.C., for the respondents, contended that the by-law did not come within the statutory powers of the Corporation and that they had no power to select one out of two or more methods of slaughter which were equally humane.

The Lord Chief Justice said the merits of the methods were not relevant to the present argument. If such an argument were carried to its logical conclusion there could be no by-law for preventing cruelty in slaughter-houses, because opinions differed as to the degree of inhumanity in different methods.

Mr. Upjohn argued further that it was the duty both of Jews and Christians not to inflict unnecessary suffering, and it was not fair to allow Jewish slaughterers to adopt methods denied to others. The Corporation could require the use of the best means of ensuring a minimum of suffering, but it could not select a method and make it compulsory and proscribe another that was equally humane.

The Lord Chief Justice gave judgment allowing the appeal. He said that the Corporation had a statutory duty to make a by-law in regard to slaughter-houses, and there was no substance in any of the points taken against it.

The appeal was allowed, and the case was remitted to the justices to convict.—*Manchester Guardian.*

Dealing editorially with the above case the *Guardian* says:—"The Lord Chief Justice and two of his colleagues

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on the King's Bench considered how pigs should be killed. The case, which came before them on appeal, arose from a circular issued to local authorities by the Health Ministry. That Ministry, when it is not deservedly assailed on major questions like housing, has time to deal with quite a number of minor but important matters that affect our common life. Among them is the correct mode of slaughtering the animals we eat. The Ministry's policy is far short of vegetarian. But it does seek to inflict as little pain as may be on the beasts we deliberately kill. There is an old superstition that some animals make a better meal if they are slaughtered slowly and horribly. It obtains in a rather dreadful way among the Jews, and the law of England makes special allowance for the habits of their butchering. But it lingers, too, among Christians. The pig, for instance, is by many thought to make better bacon if he is not polished off too suddenly, and the case that the King's Bench had to consider was whether the President of the Reading Butchers' Association, a bacon curer and the technical respondent, had or had not been guilty of a breach of the law in slinging up a pig and sticking it before he stunned it with the highly efficient pistol which is provided for the purpose and commonly used in killing cattle. The judges decided against him. They decided, that is, that when a local authority is enjoined by the Ministry responsible to make by-laws which will lessen the pain of slaughtered animals the slaughterer must abide by them. That, of course, is sound law. It is, too, an advance in humanity. To the average man who dines well, when he can, on fish, flesh, and fowl, and does not trouble at all about the way his food was killed, but who would grow queasy in a slaughterhouse, it will appeal as a useful forward step—a welcome public apology for, and amendment of, his habits. The defendants argued that it is "repugnant to the laws of England" that a Jew should be allowed to bleed beasts to death while a Christian is penalised for not using a humane killer. But that is no defence. Neither our bacon nor, what is perhaps a little more important, our ethics will suffer by the King's Bench decision."

A New Milking "Record."

The non-pedigree Shorthorn cow "Cowslip," owned by Mr. Ernest R. Debenham, of Bladen Dairy Farms, Dorset, has given 26,145½lb. of milk in the 365 days ended noon, April 25th. The weight of the cow at the end of the lactation period was 1,729lb., so that in a year she gave over fifteen times her own weight in milk. The previous highest yield for Shorthorns was held by "Lady," bred by Mr. William Ewing, of Ilford, which gave 20,163½lb. in forty-eight weeks; and for a cow of any breed by the Fresian "Kirkhill Flo III.," owned by Mr. G. T. Eaton (Sussex), which gave 26,020lb. in a year.

Poison Gas for Rats.

A recently-issued report of the Board of Agriculture for Scotland deals with experiments that have been conducted during the year for the purpose of testing the efficacy of chlorine gas as an agent for the destruction of rats. If used with proper precautions, it has been found that this gas gives highly satisfactory results. It is only recommended for use in open spaces, however, and under conditions where rats do not have access to a higher level than the gas can attain, the gas being heavy.

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VICTORIA VETERINARY BENEVOLENT FUND.

In our last issue we reported the proceedings of the Annual General Meeting of this Association, and we take this opportunity of calling attention to the excellent work of the Fund, and to the need for a large increase in the amount of support it receives from the profession. Like every other charitable institution, it has been faced, during recent years, with an alarming increase in the demands made on its resources, while its subscriptions remain stationary or are even reduced. It is sufficient to recall that in 1914 the total amount of relief granted was £317 10s. 0d., whereas in 1922 the sum spent was £958. The amount received in subscriptions in 1914 was £315, nearly sufficient to cover the whole of the grants made. In the last three years subscriptions have amounted respectively to £469, £428, and £430. In the same period the amounts spent on relief have been £702, £885, and £958. It would obviously have been impossible for the Fund to meet these growing demands if it had not received the magnificent bequest of the late Dr. Clement Stephenson. The profession has reason for gratitude that the needs of the unfortunate, the widows and the fatherless, are being met to the extent of nearly £1,000 a year, but it needs pointing out that whereas a few years ago the subscriptions were sufficient to cover the cost of relief, they now contribute less than 45 per cent. of the cost.

As was pointed out at the Annual Meeting by Mr. West, the Fund is sailing very close to the wind. Of the thirty odd recipients, some only have 7/6 a week. At the April meeting we noticed the Council made a grant to a widow of 5/- a week. In view of the present cost of living, this help must be miserably inadequate. But before the Council can grant 10/- a week to a person in distress, it must be sure of receiving fifty additional subscriptions of 10/6 per annum. It would relieve the minds of the members of Council who have to consider the appeals for assistance if they knew they could rely upon an increased membership of the Fund. It is a Fund of which the profession may be proud. It is managed in a most economical manner, and members may be sure that in subscribing to it they are helping to relieve some distressed widow of a deceased brother practitioner, or helping to educate an orphan child. We heartily endorse the sentiments expressed at the Annual Meeting, and trust that all readers who do not at present subscribe, and those who do, but who have not already sent their subscription, will do so at once. The minimum subscription is half-a-guinea, which should be sent to the Secretary at 10 Red Lion Square.

Abstracts and Reviews.

Human and Animal Tuberculosis.

Rôle of the Three Types of Tubercle Bacilli.

(Continued.)

Relation of Intrinsic Power of Resistance to Natural Liability to Disease.

The case of the rabbit shows us that high susceptibility, as revealed by experiment, does not necessarily go hand in hand with great liability to a given disease under natural conditions of existence. The rabbit, which I believe never suffers from tuberculosis in wild life, has been shown by experiment to be exquisitely susceptable to infection with the bovine type, not less so than the guinea-pig itself—and that, too, when the bacilli are given with food. Yet it successfully avoids infection, though it must often feed on pastures grossly contaminated with bovine tubercle bacilli from the droppings of tuberculous cattle. It owes its immunity, I believe, to its fastidiousness. It is a delicate feeder, never greedy, never in a hurry for its food, and probably possesses—to judge from the muscular activity of its nostrils—a very acute sense of smell.

The rabbit is an extreme case of the kind. The goat and the sheep also commonly escape tuberculosis, although they are highly susceptible to artificial inoculation. They, probably, are not brought much into contact with other tuberculous animals. At the opposite pole to the rabbit is the dog with its voracious appetite. Tuberculosis in the dog is not very uncommon. Opportunities for infection abound. But its natural powers of resisting tuberculosis are high, and while it succumbs occasionally to the naturally acquired disease, it is difficult to infect experimentally; most of the successful attempts having been obtained only by introducing large doses of infective material into the peritoneal cavity of young puppies. To put the case of these two species shortly: the rabbit escapes tuberculosis in spite of extreme susceptibility, the dog succumbs occasionally in spite of high powers of resistance.

The pig is of exceptional interest. It is the only one of the larger domesticated mammals clearly shown to be susceptible to infection by all three types of tubercle bacilli. Its susceptibility to the types other than the bovine is, however, low, for in all cases found, so far, to be caused by bacilli of avian or human type, the disease has been strictly limited to the submaxillary lymphatic gland.* This raises the question why this gland is susceptible beyond that of the other cervical lymphatic glands of the pig. It may be that the portal of entry in these cases of localised tuberculosis is the teeth of the lower jaw, and it is a interesting point, in this connection, that the pig is said (for I cannot speak with any certainty) to be almost the only domesticated mammal that suffers at all commonly from dental caries.

Stability of Type of Tubercle Bacilli.

Are the types stable, or may they be changed into one another on a suitable change of host? Does, for example, the human type of bacillus change into the bovine type of bacillus by cultivation in the body of the ox, or the bovine type change into the human type when it lives in man? This point is of great practical importance; unless we can assume stability, we obviously cannot form any true estimate of the part played in human tuberculosis by infection from the cow—if bovine bacilli change their type in the body of man then infections from bovine sources must be far more numerous than the findings of bacilli of bovine type in man would indicate. At one time Nocard came to the conclusion that the type of bacillus changes with a change of host; but it is now certain that such change, if it occurs at all, does not take place with regularity or certainty. Many "passage" experiments with tubercle bacilli of human type have been carried through long series of calves without the slightest change in the bacillus, and the bovine type of bacillus has been found in man in cases of tuberculosis of very long standing—for example, in one of Griffith's cases, in which lupus had existed for fifty years. Thus, if a change of type takes place it does so capriciously, without any obvious reason. Many experiments have been made; the results of different observers have been much the same, but the conclusions drawn from them are different. To take only experiments in which tubercle bacilli of human type have been passed from calf to calf during a period of months or a few years: many such experiments have resulted in the bacillus coming out in the end unaltered, but in some the strain last isolated has been one of bovine type. The question then arises—is this a modification of type, or merely a *substitution* of one kind of bacillus for the other? Some observers have been satisfied that modification has occurred, but others have interpreted such results differently, pointing out that spontaneous infection with the bovine type of tubercle bacillus is very common in cattle, and that it is only to be expected therefore that, in passage experiments through several calves, the results occasionally should be complicated by spontaneous tuberculosis; and, as a matter of fact, the cases of apparent change of type have become less frequent when the conditions of the experiments have been improved. This seems to me the sensible view.

The enormously greater frequency with which strains of bovine bacilli are found in very young children as compared with older persons makes it tempting to believe that bovine bacilli are converted into bacilli of human type in the body of man; but, in my opinion, this conclusion is not warranted by experimental evidence. The question is, perhaps, still open, but the balance of evidence is, I think, strongly on the side of stability. It will therefore be assumed, in what follows, that the types of bacilli are stable, so that when we find in a patient a tubercle bacillus of human type we may be sure that it has not come from a cow, and that the extent of bovine infection in man is to be fully measured by the extent to which tubercle bacilli of bovine type have been found in him.

Relative Extent of Bovine Infection of Man.

If this assumption is sound, but not otherwise, we may rely that the analysis which appears in Table II. truly represents the relative extent to which infection has come from the cow in each variety of human tuberculosis dealt with. The table is based as far as possible on the results of investigations concerning 1,068 cases of human tuberculosis recorded by those who carried out the practical work of the last Royal Commission on Tuberculosis,

* Tubercle bacilli of human type alone have been found in the pig four times, and those of avian type alone 48 times.

collected in 1920 by Griffith,* and consisting very largely of his own work. The methods used for differentiation were the same throughout, and were those adopted by the Commission, and as the cases concerned were almost all English ones, the series is a self-consistent and homogeneous one. To those are appended a few results from other sources.

It was at first my intention to combine the results obtained in Great Britain, Germany, and America, and attempt to give world figures; but as I proceeded I found myself obliged to make so many reservations and exclusions that I abandoned the attempt. The difficulty was mainly due to the excessive proportion of bovine infections found by two observers in Scotland in the case of cervical gland tuberculosis and tuberculosis of bones and joints respectively. Smaller discrepancies, sometimes of an opposite kind, were found in the results obtained in other countries—*e.g.*, Germany and America. But, on the whole, the differences due to this change of plan are only small ones.

The chief differences are as follows: In primary pulmonary tuberculosis world figures give a proportion of bovine infections, in nearly 1,000 cases, of 0·4 per cent., instead of the 1·3 per cent. recorded among English cases. This is excluding two cases of mixed infection when the bovine bacillus was, in all probability, a "harmless lodger," introduced by milk into a lung already diseased by the human type of bacillus. In cervical gland tuberculosis Mitchell, in Scotland, found 93 per cent. of bovine infections in children under 5 years, and 87 per cent. in those between 5 and 13. Park and Krumwiede's, and Lewis's figures from America give 73 per cent. and 42 per cent. at similar ages. German figures, inconsiderable in number, give a proportion of 36 per cent. and 33 per cent. American figures, therefore, as the table shows, stand between those of England and Scotland. Thus there probably is a very considerable difference in the proportion of bovine infections in different countries.† To test this Griffith examined 14 cases under 16 years of age from Scotland. Among these he found a proportion of 71·4 per cent. of bovine infections, which, though not so high as Mitchell himself had found (90 per cent.), was considerably higher than he had found among his cases from England (55·5 per cent. at similar ages).

In bone and joint tuberculosis Fraser in Edinburgh got results comparable to those of Mitchell in cervical gland tuberculosis. Fraser found 68 per cent. of bovine infections in children under 5 years, and 25 per cent. in those between 5 and 16. Griffith also examined a few Scotch cases of the same kind, and found a proportion of bovine infectious considerably higher than those of his English series, though not so high as Fraser had found. Griffith's percentages for these cases were 37·5 under 5 years and 22·2 from 5 to 16.

TABLE II.—*Role of Human and Bovine Types of Tubercle Bacilli in Various Kinds of Human Tuberculosis in England and other Countries.*

Group.	Type of tuberculosis.	Types of tubercle bacillus.			
		All ages England: Percentage.		Other reports Percentage.	
		Human.	Bovine.	Human.	Bovine.
1	Pulmonary	98·7	1·3	—	0·4*
	Bronchial glands ...	94·5	5·5	—	—
2	Abdominal	50	50	—	—
	Cervical glands ...	54	46	—	90·0† / 71·4‡ / 53·0‖
3	General	84	16	—	—
	Meningitis	82	18	—	—
	Bones and joints ...	80	20	—	58·6§ / 29·6‡ / 21·6*
	Genito-urinary ...	82	18	—	—
4	Lupus	50	50	—	—
	All fatal cases ...	93·5	6·5	—	—

* World figures. † Mitchell (Scotland). ‡ A. S. G. (Scottish cases only). ‖ U.S.A. § Fraser (Scotland).

Table II. is intended to show the relative parts played by tubercle bacilli of human and bovine type in the four following clinical varieties of human tuberculosis, namely:—

Group 1.—Primary pulmonary tuberculosis and primary bronchial gland tuberculosis—a group which consists, in all probability, of cases caused by aerial infection.

Group 2.—Intestinal mesenteric gland, and peritoneal tuberculosis—in other words, primary abdominal tuberculosis, together with tuberculosis of the cervical lymphatic glands—that is to say, cases probably to be attributed either to infected food (milk), or to air-borne tubercle bacilli (from cases of pulmonary tuberculosis) which have stuck to the pharyngeal mucus, and which have either been swallowed or have penetrated locally.

Group 3.—General tuberculosis, tuberculous meningitis, bone and joint, and genito-urinary tuberculosis; that is to say, cases of disease caused by dissemination of the bacilli by the blood-stream in greater or lesser numbers.

Group 4.—Lupus and other forms of tuberculosis of the skin; probably caused by direct infection.

In Group 1 the proportion of bovine infections is negligible—little more than 1 per cent. in primary pulmonary tuberculosis, and in bronchial gland tuberculosis out of 17 cases examined only one has yielded bovine bacilli—and that a case with no visible tuberculosis in these glands or elsewhere. In Group 2, including abdominal tuberculosis and tuberculosis of cervical glands, the proportion of infections with tubercle bacilli of bovine type is much higher—in round numbers 50 per cent. at all ages.

From these facts several important inferences may be drawn. The frequent occurrence of bovine tubercle bacilli in cervical glands and their rarity in bronchial glands are strongly opposed to the view that tubercle tracks downwards from gland to gland, extending in this way from the neck to the thorax and so to the lungs. In order to hold this view we should have to assume that only tubercle bacilli of human type can track in this way.

Again, the fact that bovine tubercle bacilli are so frequent in mesenteric glands and so rare in the lungs is in opposition to Calmette's view that pulmonary tuber-

* Jour. of Pathol. and Bacteriol., XXIII., p. 129.

† The late Sir G. Sims Woodhead, in his address to the Congress of Hygiene and Demography in 1912 already recognised this: "I believe," he said, "that even in different parts of Great Britain tuberculosis differs in type, and that bovine and human tuberculosis manifest themselves in different proportion . . . say in Edinburgh and in London, in Manchester and in Cambridge, and I am satisfied that, if in a small country like ours there are these local variations, they may also be demonstrated in other countries covering greater areas."

culosis is commonly caused by tubercle bacilli absorbed through the intestinal mucous membrane, and carried by the thoracic duct and the innominate vein to the right side of the heart, and so to the lungs. If this were the common channel of infection we should expect to find the same proportion of bovine infections in pulmonary as in abdominal tuberculosis. Lastly, the fact that bovine tubercle bacilli have frequently been found in abdominal and cervical tuberculosis (that is, in cases arising from infection through some part of the alimentary canal) and seldom in the lungs is easily explained on the ground that human tubercle bacilli alone are sprayed into the air, therefore alone have a chance of entering the lungs directly, while bovine tubercle bacilli, being limited to food substances, can only infect man through the alimentary canal. The inhalation theory of the origin of pulmonary tuberculosis thus receives strong support.

Passing now to Group 3 we see that in each of its subgroups, general tuberculosis, meningitis, tuberculosis of bones and joints, and genito-urinary tuberculosis, the proportion of cases in which bovine bacilli have been found is nearly the same. Perhaps if we had sufficiently extensive investigations they would come out quite the same. These cases almost certainly arise from some small primary focus elsewhere, usually in a lymphatic gland and often entirely unsuspected. Probably both aerial and food infections contribute to this group in the same proportion as they occur in the form of primary infections. Twenty per cent. of bovine infections may, therefore, seem high for these blood-borne infections, but we must remember that the majority of such cases as fall into Group 3 occur in early life when infections through the abdominal route with its large proportion of bovine bacilli are far commoner than they are later.*

In cases of lupus it is, at first sight, surprising to find so high a proportion of bovine infections as 50 per cent. Lupus usually arises on the face, and, to a lesser extent, on the buttocks, to which tubercle bacilli may be considered to have access after passing through the alimentary canal. It may therefore be considered that usually, when it is not secondary to ulceration of a caseous gland, it is caused by direct application of tubercle bacilli to the skin. Now bovine bacilli in milk and tubercle bacilli of human type which, whether dry or moist, get into the air from consumptive patients have, probably, about an equal chance of getting to the skin of the face in numbers sufficient to cause infection. Hence it is that the proportion of infections with one type of mammalian tubercle bacillus is about equal to that of the other. A large portion of the strains of tubercle bacilli derived from lupus are of attenuated virulence, but not all; and it is more probable that tubercle bacilli become attenuated in the skin than that lupus is caused by attenuated bacilli. For if the latter were the case we should have to suspect the horse or other cases of lupus as the most probable sources of supply of the attenuated bacilli. But there is no reason to suppose that lupus is specially common among those who have to do with horses, or that it is usually caught from a patient suffering from the same disease

* In 1911 out of 100 children under 5 years who died of tuberculosis of any kind, 52 were attributed to general tuberculosis, meningitis, and bone and joint tuberculosis, and only 16·3 to pulmonary tuberculosis. Reg. Gen. Rep.

"Bovine" Proportions of Total Tuberculosis Death-rate.

The last question that remains for consideration is: What share in the total death-rate from all kinds of tuberculosis is attributable to the bovine type of tubercle bacillus? It is obvious that, in answering this question, it will not do to add together all the cases of tuberculosis in which the type of bacillus has been investigated and record the percentage in which bacilli of bovine type have been found; for these cases have been selected, very largely, from those kinds of tuberculosis in which the bovine bacillus has a large share, while pulmonary tuberculosis are rare, and which causes 79 per cent. of the deaths from tuberculosis of all kinds, is not proportionately represented. One has rather to take each kind of tuberculosis separately, determine the percentage of cases in which bovine bacilli have been found in it, multiply each of these figures by the number which gives the percentage of the total mortality from tuberculosis caused by that variety of the disease, and divide by 100. In this way we arrive at the number of deaths in every 100 from all kinds of tuberculosis contributed by each kind of tuberculosis and caused by bovine bacilli. This calculation is set out in Table III.

TABLE III.—*Showing Proportion of All Deaths caused by Tuberculosis due to Bovine Type of Bacillus, England and Wales.*

Varieties of tuberculosis.	Deaths in 1919.	Percentage of all deaths from tuberculosis.	Percentage of each kind caused by bovine T.B.	Contribution in each variety to total mortality from tuberculosis made by bovine T.B.
Pulmonary, acute and chronic	36·662	79	1·3	1·04
Meningitis...	3·696	—	—	—
Disseminated	1·789	—	—	—
Spinal column	0·663	—	—	—
Joints	0·376	—	—	—
Other organs	0·629	—	—	—
Total	7·153	15·4	(say) 18	2·8
Peritoneum and intestines	2·410	5·2	50	2·6
Total	50·225	—	—	—
Percentage of total mortality from all kinds caused by bovine T.B.	—	—	—	6·44

The result shows that of the deaths attributed to tuberculosis of all kinds about 6·5 per cent. are attributable to bovine bacilli, and therefore to infection coming from the cow, probably in the immense majority of cases through milk.

Work in Southern Rhodesia.

VETERINARY AND BACTERIOLOGICAL REPORTS.

The following passages occur in the South Rhodesian reports of the Chief Veterinary Surgeon (Mr. J. M. Sinclair) and of the Veterinary Bacteriologist (Mr. Ll. E. W. Bevan) for the year 1921.

Mr. Sinclair's report states:—

AFRICAN COAST FEVER.—One fresh outbreak occurred, and the total mortality was 204, as compared with three

fresh outbreaks and a mortality of 765 head during the previous year. It will be seen from this schedule that no case of coast fever occurred anywhere in the territory from June 1st until the end of the year. Although the position is more satisfactory than at any time since the introduction of the disease in 1901, I am not sanguine enough to say that the complete eradication of all infection is within sight. Time after time recrudescences have occurred long after areas had been released from quarantine, and fresh outbreaks have unexpectedly and inexplicably occurred in districts not previously affected. It is necessary, therefore, that there should be no relaxation of the present restrictions and procedure; the greatest vigilance should be exercised by stock owners and the officials of this Department in reporting and investigating all cases of sickness and mortality amongst cattle where the cause is not clear. The dipping of cattle as required by the regulations and the early detection of infection will assuredly result in reducing losses to a minimum, and in preventing the widespread dissemination of infection in the unfortunate event of the disease existing at any centre at present unknown and unsuspected.

Matobo.—A fresh outbreak occurred on the farm Vimbi in February. Two oxen strayed from the farm in December, 1920, and were impounded at Plumtree. A permit was issued for their return to Vimbi, but instead of being taken by the route laid down, they were driven through the infected area, with the result that both died from coast fever about four weeks afterwards. The Vimbi cattle were being dipped at a tank on an adjoining farm, with various other herds totalling well over 1,000 head, and pending the erection of the necessary tanks and the fencing of the farm Vimbi this procedure was continued, the dipping interval being reduced to three days. There was no further case of disease amongst any of the cattle directly or indirectly involved. At the previous infected areas the mortality ceased at the end of April.

Cattle Cleansing Ordinance.—The district of Inyanga, excluding a strip along the eastern border where there are very few cattle, was brought under the operation of this Ordinance, and dipping is now being satisfactorily carried out.

During the year 240 dipping tanks were erected, bringing the total number to over 2,000.

The system inaugurated in 1920, whereby Cattle Inspectors were supplied with the isometer testing apparatus, after a course of instruction at the chemical laboratory, is working most satisfactorily, and has proved a great convenience to stock owners, besides saving the expense of forwarding samples to Salisbury and relieving the officers of the chemical department of an enormous amount of routine work.

Complaints have been made that inspections are not frequent enough to ensure that the letter of the law is observed by all stock owners in the areas under the operation of the Ordinance. It is true that some owners are most casual, not only in regard to the regularity of dipping, but in maintaining the dipping solution at or near the prescribed strength; but matters are improving, due partly to a large number of prosecutions for tick-infested cattle, and on the whole it may be said that the provisions of the Ordinance are reasonably observed. Apart from the official inspection returns, the absence of ticks on cattle on the roads and at cattle sales may be taken as an indication of how dipping is being carried out. Another indication is the quantity of dip imported or manufactured in the Territory; it is estimated that sufficient dip was sold during the year to dip 1,500,000 head of cattle fifty times.

Infectious Abortion of Cattle.—The existence of this disease was demonstrated by the agglutination test in 94 herds, an increase of 58 over the previous year. This, however, does not represent the prevalence of the disease, as it is certain that many owners have not reported its presence in their herds. The virulence of the infection appears to vary considerably; for instance, the District Veterinary Surgeon, Gwelo, states that in some cases only one or two abortions occurred, whilst in others not only was there a large number of abortions, but many of the cows were permanently affected by becoming sterile. In my last annual report I suggested that the low birth-rate reported from time to time amongst ranching and other herds was due to the existence of infectious abortion. To gain some definite information on the point, certain observations were made on a large ranch where abortion had recently been diagnosed amongst the young breeding herds. Six herds of aged breeding cows which had been giving average calf crops, and amongst which the existence of this disease had never been suspected, were tested and the existence of the disease proved in each by the agglutination test. From this, and from our knowledge that immunity is gradually established in a herd, it would appear that the disease has existed for many years past on this particular ranch, and that the low average birth-rate is due to its prevalence amongst the young breeding herds, and it is reasonable to suppose that the same process has been going on in many other herds throughout the Territory.

Legislative measures for the control of infectious abortion are not likely to prove successful, chiefly because many infected animals do not abort, but are nevertheless capable of spreading infection, and may remain infective through several successive pregnancies. It is evident, therefore, that every breeding animal in an infected herd is a potential reservoir of infection, and that quarantine, segregation or destruction of patent aborters would not prove satisfactory. In small herds all infected animals could be eliminated by the agglutination test; but even if such animals could be disposed of satisfactorily, the process, as a general measure, is not feasible. It is possible that with the further knowledge that must result from the investigations now being pursued in this and other countries some radical means of dealing with the disease may be evolved; meantime we must rely on vaccination and ordinary prophylactic measures, with the object of reducing the losses and the spread of infection. Supplies of the "devitalised" vaccine prepared by the Director of Veterinary Research are now available.

Tuberculosis.—At the Shangani Estate the herd in which the disease was discovered the previous year was re-tested with tuberculin, and nine re-acting animals were isolated. No cases recorded elsewhere in the Territory.

Quarter-Evil.—This disease exists now in every district. The total mortality reported amounted to 3,142

head. Cases occur all the year round, but the heaviest mortality was reported during the winter months. All vaccines have been discarded in favour of aggressin and Leclainche Vallee's liquid preparation, both of which have given most satisfactory results.

ANTHRAX.—Three cases occurred in the Shamva section of the Mazoe district and one in the Mtoko district, the animals affected being cattle. All in-contacts were vaccinated with Pasteur vaccine. The cattle on a number of farms in the Mazoe district, where the infection is known to exist, were also vaccinated.

EPHEMERAL FEVER (Three-days' Sickness of Cattle).—As usual, this disease was prevalent during the summer months, with practically no mortality.

MYIASIS (Screw Worm) OF CATTLE.—This affection was not so prevalent as during the previous year. It is, as a rule, most in evidence during the summer months, but in certain localities cases occurred during the winter months, generally low-lying areas with plenty of moisture and vegetation.

TETANUS.—Tetanus is so rare amongst the domestic animals in this Territory that the occurrence of a number of cases is worthy of record.

TRYPANOSOMIASIS.—A slight mortality occurred amongst cattle in the Wankie, Melsetter, Hartley and Darwin districts.

HORSE-SICKNESS.—The total mortality was 186 horses and mules, compared with 124 the previous year. The preventive inoculation of horses with the vaccine supplied by the Director of Veterinary Research was largely practised during the year. The subject is fully dealt with in the report of this official.

GLANDERS.—No cases of glanders occurred, and no re-action to the mallein test, which is applied to all horses, mules and donkeys on importation.

EPIZOOTIC LYMPHANGITIS.—No case of this disease occurred during the year.

SWINE FEVER.—One outbreak occurred in the Lomagundi district; 29 animals died and the remainder were destroyed.

IMPORTATION AND EXPORTATION OF STOCK.—A schedule is attached showing the number of animals imported and exported.

REPORT OF THE VETERINARY BACTERIOLOGIST.

The routine work of the office, laboratory and inoculation station was curtailed during the absence of the Government Veterinary Bacteriologist on leave, when no vaccines were prepared or issued, and research work was entirely suspended. During his absence the examination of smears and the conduct of official correspondence was entrusted to the senior lay assistant, and was efficiently and satisfactorily performed. The table in next column shows the number of preparations received and the principal diseases detected.

The number of preparations received was nearly 1,000 more than in the previous year, but this was largely due to the increased number of specimens of blood collected by the pipette method and forwarded for the detection of infectious abortion by the agglutination test. This simple method of obtaining and preserving blood has proved most satisfactory, and it is now rare to receive a preparation unsuitable for the test. In view of the fact that certain authorities consider the best method of dealing with the disease to be early detection and segregation of infected animals, the simplification of this somewhat delicate test is of great advantage.

PREPARATIONS RECEIVED FOR DIAGNOSIS DURING 1921.

Month.	Total.	African Coast Fever.	Infectious Abortion.	Quarter Evil.	Anthrax.	Trypano-somiasis.	Tuberculosis.	Anaplas-mosis.
January	194	25	4	3	1	—	—	8
February	220	13	11	13	1	9	—	10
March	171	3	10	4	—	1	—	—
April	269	1	23	19	1	1	—	4
May	260	—	33	11	—	1	1	2
June	212	—	39	10	—	3	—	3
July	324	—	37	11	—	3	—	—
August	253	—	33	9	—	—	—	1
September	275	—	45	9	—	2	—	2
October	275	—	34	11	—	2	—	—
November	169	—	60	9	—	—	—	4
December	193	—	17	6	1	1	—	11
	2,815	42	346	115	4	23	1	45

PREPARATIONS RECEIVED FOR DIAGNOSIS DURING 1920.

	1,827	167	75	133	4	57	4	—

(To be continued).

Association Reports.

The Central Veterinary Society.

ADDRESS BY SIR J. BLAND-SUTTON.

A general meeting of the Central Veterinary Society was held at 10 Red Lion Square, London, W.C., on Thursday, June 1st, 1922, Mr. G. H. Livesey (President) occupying the chair.

The following Fellows signed the attendance book: Messrs. E. F. Stroud, W. N. Thompson, R. J. Foreman, J. Rowe, A. Payne, and F. W. Willett, Sir John Bland Sutton, F.R.C.S., Lt.-Cols. H. S. Mosley and A. J. Williams, Majors G. Dunkin, P. Dayer Smith, W. S. Mulvey, Capts. A. E. Willett, R. Bryden, H. Kirk, Prof. E. B. Reynolds, Messrs. W. R. Davis, S. Villar, J. McCunn, and J. F. Macdonald, Hon. Secretary.

Visitors.—Major Holness, Messrs. C. N. Thompson, J. Clunies Ross, and W. Cox.

The minutes of the previous meeting were taken as read, and were confirmed and signed.

The SECRETARY read a letter from Mr. Reid Chalmers, who stated that pressure of business compelled him to resign his membership.

It was resolved that the resignation be accepted with regret.

The SECRETARY also read a communication from the National Veterinary Medical Association with reference to the forthcoming meeting of the Association at Bath.

Letters regretting inability to attend were announced from Captain Dunlop Martin, Major-General Sir Layton Blenkinsop, Major-General Sir John Moore, Mr. J. W. McIntosh, Mr. G. P. Male, Colonel Dunlop Young, Mr. Reekie, Major G. Rees-Mogg and Major F. Hobday.

The SECRETARY announced that a pamphlet had been received from the Medical Research Institute, Pusa, India, entitled "The Preparation of Anti-

rinderpest Serum using Animals of Moderate Susceptibility as Virus Producers. Part I., Buffaloes," by W. A. Pool, M.R.C.V.S. and T. M. Doyle, F.R.C.V.S. Two copies of a United States publication with regard to meat inspection had also been received from Dr. Wray.

On the suggestion of the PRESIDENT, it was agreed to forward one copy of the latter publication to the Library of the Royal College of Veterinary Surgeons.

MORBID SPECIMENS.

Mr. W. R. DAVIS exhibited a sample of some hay which had occasioned the poisoning of five cart horses out of a stud of fifteen. It would be seen that the sample consisted almost exclusively of sorrel of the kind known as *Rumex acetosella*. Some time ago he had been called in to treat a horse which was suffering from colic and diarrhœa. After giving it some chlorodyne and alkalies it recovered, but he was then informed that four other horses in the stud had been affected with diarrhœa for three or four weeks. He immediately thought there must be something wrong with their food, and examined the hay. On examining the cut surface of the stack from which the hay was procured, he found layers of a reddish-brown colour consisting almost entitrely of sorrel, which, in his opinion, had been the cause of the trouble. The use of that particular hay was therefore discontinued, and there were no further cases. The symptoms exhibited by the animals, besides diarrhœa, were loss of appetite, weakness and sweating. The best description of poisoning by sorrel was given, he thought, in Frohner's *Toxicology for Veterinary Surgeons*, where it was said that the three plants *Rumex acetosa*, *Rumex acetosella* and *Oxalis acetosella* were all poisonous, owing to the fact that they contained acid oxalate of calcium; poisoning occasioned by those plants was therefore oxalic acid poisoning. Frohner described many cases of such poisoning amongst sheep, but only one fatality in the case of horses—that of a horse which, after eating a considerable quantity of *Rumex acetosella*, was seized with tetanic cramps—probably colic—which returned every five minutes or so. The animal in question salivated, trembled, had a staggering gait and showed almost paralytic symptoms; it died within the course of a few hours. It was curious that sorrel was often eaten by children, and in Scotland the fresh leaves were used as a salad and known as sourocks. It might be, however, that after drying some change occurred which made it more poisonous.

Major DUNKIN again produced the dog's liver he had exhibited at the previous meeting, on which occasion considerable discussion had taken place as to the cause of the trouble, which he and many others ascribed to tuberculosis. It had since been diagnosed, however, by one eminently competent to judge, as a case of intestinal actinomycosis. He had written to Sir John McFadyean offering the liver to his museum, and the offer had been accepted.

CAPTAIN KIRK referred to the specimen he had exhibited at the previous meeting, and mentioned that a detailed report of the case appeared in the last issue of the *Veterinary Record*. He had since had an interview on the matter with Sir John McFadyean, who said he had detected no sign of meningitis and was at a loss to explain the cause of the illness. He thought Capt. Kirk's own diagnosis of auto-intoxication was a safe one, to say the least.

Messrs. G. Elwes, F.R.C.V.S., and H. C. Talbot, M.R.C.V.S., were nominated for Fellowships.

Election of Fellow.—A ballot was held for the election of Major-General Sir John Moore, K.C.M.G., 5 Briardale Gardens, Hampstead (proposed by Major F. Hobday and seconded by Lt.-Colonel Dunlop Young), following which the PRESIDENT announced that he had been duly elected a Fellow of the Society.

It was pointed out that owing to a mistake in the agenda Sir John Moore's name appeared under the heading of "Nominations," but, as he had been nominated verbally at the previous meeting, the election was in order.

Other Business.—The PRESIDENT announced that at its meeting that evening the Council had decided to make a donation of five guineas to the Malcolm Memorial Fund.

CAPTAIN KIRK enquired whether anything had been done with regard to the suggestion he had made some months previously in reference to an information bureau.

The SECRETARY said that at the previous meeting he had read a letter from Mr. Buxton, the Secretary of the National Veterinary Medical Association, stating that a special committee of the Association had been set up to enquire into the matter.

The PRESIDENT expressed the great pleasure the Society felt in welcoming that evening one of its most esteemed Honorary Fellows, Sir John Bland-Sutton, who was known to be a very good friend to the veterinary profession. He was especially welcome as being President of the Royal Society of Medicine, which many Fellows of the Central Veterinary Society were now joining and which he thought would be a means of cementing the union between the two branches of the medical profession. It was particularly kind of Sir John to be present that evening, because he was an exceptionally busy man and had been besieged by requests to give addresses, most of which he had been obliged to decline owing to the many calls on his time. During the present year the veterinary profession had made great efforts to get into closer touch with the medical profession, and personally he thought it was partly in recognition of that that Sir John had consented to be present.

THE VENTRICLES OF THE BRAIN AS SECRETING ORGANS.

(Abstract of an Address by Sir John Bland-Sutton, F.R.C.S.)

Recent researches into the physiology of the choroid plexuses of the brain prove that they act as glands, and the secretion is known as cerebro-spinal fluid. The choroid plexuses are vascular and covered with a single layer of epithelium; they differ in construction from glands in general by having the secreting cells

on the surface of the plexus. Experimental evidence indicates that the bulk of the fluid is secreted above the aqueduct of Sylvius. The fluid secreted by the choroid plexus collects in the cerebral ventricles, and the aqueduct establishes communication between the third and fourth ventricles from which it escapes by means of the lateral recesses into the irregular space at the base of the brain called the cisterna magna. There is no external orifice for the discharge of the fluid and the available evidence indicates that it is absorbed by veins. When both lateral recesses are occluded the effect on the brain is disastrous, for the pressure produces great distension of the brain and hydrocephalus. The effects produced by the accumulation of cerebro-spinal fluid in the ventricles of the brain is analogous to the effects of complete obstruction to a ureter—the pressure of retained urine slowly leads to atrophy of the secreting structure of the kidney, ending in hydronephrosis. Evidence is furnished that hydrocephalus, like hydronephrosis, occurs during the later stage of intra-uterine life and though the children are born alive, they rarely live for more than a few days.

It is a reasonable assumption that the ventricles of the brain serve as temporary receptacles for the cerebro-spinal fluid, most of which is secreted by the choroid plexuses. The fluid escapes by the lateral recesses of the fourth ventricles. Complete obstruction of the inter-ventricular communications either at the aqueduct of Sylvius, or at the lateral recesses of the fourth ventricle is as inimical to life as complete obstruction to both ureters.

The address evoked an interesting discussion, in which the following Fellows and visitors took part :—Lt.-Col. A. J. Williams, Mr. J. Willett, Major Simpson, Mr. Cox, Capt. Kirk, Mr. J. Clunies Ross, and the President.

Lt.-Colonel H. S. Mosley said it gave him great pleasure to propose a hearty vote of thanks to the lecturer for his interesting address. As veterinary surgeons, they were not all very familiar with the structure of the brain, but the lecturer had put his subject before them in a very lucid manner, and they owed him a great debt of gratitude. Sir John Bland-Sutton had always been a good friend to the veterinary profession, and he had given additional proof of that of late by allowing veterinary surgeons to become Fellows of his Society, for which they felt very grateful. Lectures such as that which had been delivered that evening showed the importance of comparative pathology; there was no doubt that the veterinary and medical professions would learn a great deal by interchange of views.

Major Dunkin, in seconding the vote of thanks, associated himself whole-heartedly with everything the proposer had said. Sir John Bland-Sutton's lecture had created in him a feeling of profound ignorance, but he had been deeply interested and had learned a very great deal.

The vote of thanks was carried with acclamation.

Sir John Bland-Sutton, in reply, thanked the meeting for their vote. He agreed that it required some care to present complex pathological problems in a way which would be interesting, attractive, and, perhaps he might add, romantic. The reason he accepted the President's kind invitation to give an address that evening was that he felt he was indebted to the veterinary profession for the many kindnesses he had received from those who practised it in all parts of the world. He deeply appreciated, moreover, the honour the Society had done him in electing him a Life Fellow, which placed him still further in their debt.

The meeting then terminated.

J. F. Macdonald,
Hon. Sec.

Scottish Metropolitan V.M.A.

A meeting of the Scottish Metropolitan Veterinary Medical Association was held at the Royal (Dick) Veterinary College, Edinburgh, on Wednesday, 31st May, 1922.

The President, Mr. J. Henderson, occupied the chair.

The minutes of last meeting were held as read.

The Secretary said letters of apology for absence had been received from Mr. William Anderson and Major Peddie. He also read a letter from the Secretary of the Provisional Committee of the National Association in reference to the Bath Conference and asking the hearty support of members to ensure its success.

The Secretary gave notice that the Association had lost two of its members, Mr. A. S. Wallace, of Arbroath, and Mr. W. Braes, of Linlithgow.

Mr. Inglis: I happen to have been a neighbour of the late Mr. Wallace, and have known him for over thirty years. I would propose we enter in our minutes our regret at losing so valuable a member. Mr. Wallace was a perfect gentleman in every respect and a very kindly neighbour.

New Members.—Messrs. A. B. Kerr, A. W. Baird, and C. M'Hattie, were duly elected members of the Society.

The Secretary nominated Mr. A. W. Robertson, of Arbroath, and Mr. Ross for membership.

The President then called on Mr. William Nairn, Blairgowrie, to read his paper on "Grass Disease."

[Mr. Nairn's paper, together with the ensuing discussion, receive separate publication.—Ed.]

Mr. Peggie proposed a very hearty vote of thanks to Mr. Nairn for his very able paper. (Applause.)

The proceedings then terminated, tea being afterwards served, for which the members were invited to place a contribution in the collecting box of the Victoria Veterinary Benevolent Fund.

R. G. Linton,
Hon. Secretary.

There has been a serious outbreak of grass sickness among horses in the Buchan district of Aberdeenshire. No fewer than sixteen horses have died from it within the past few days.

Royal Veterinary College Athletic Club.

The Annual Sports of the R.V.C. Athletic Club were held on Tuesday afternoon, the 13th inst., at Tufnell Park.

Although the weather was rather inclement, the attendance was nevertheless encouraging, both to the competitors and to the officials, who had done so much towards making the day a success.

The prizes were graciously distributed by Mrs. Wooldridge, and the College have to thank all those members of the profession and friends for the kindness and generosity which made it possible for the Club to offer such valuable prizes.

The *Victor Ludorum* title, and with it the Wheatley Cup, were gained by Mr. G. K. Fenn-Smith, who showed good form throughout, gaining four firsts, a second and one third prize.

There were many interesting events, the most popular being the College Derby—A "Veterinary Antique Plate." Donkeys were provided, no cocaine or other "dope" being allowed, since pins and other goads were deemed more useful.

There was a good field for the College "Oaks," or Ladies' race, and some good form was shown. After a false start, Miss Baji won by a short head.

RESULTS.

Throwing the Cricket Ball.—1st, F. R. Hale; 2nd, C. J. N. Godfrey. Distance, 99 yards 9 inches.

100 *yards Scratch.*—1st, G. K. Fenn-Smith; 2nd, J. A. Craft. Time, 10⅘ seconds.

Long Jump.—1st, G. K. Fenn-Smith; 2nd, G. T. Cattell. Distance, 17ft. 6½ inches.

120 *yards Hurdles.*—1st, E. B. Thompson; 2nd, E. Wilkinson; 3rd, G. K. Fenn-Smith.

Penalty Kick Competition.—1st, E. Morris; 2nd, M. Sadler.

Half Mile Scratch.—1st, E. B. Thompson; 2nd, H. Hay-Barclay; 3rd, H. P. Lightfoot. Time, 2 minutes 14 seconds.

Mile Walk.—1st, R. R. Willing; 2nd, E. G. Langford. Time, 9 minutes 7 seconds.

Putting the Weight.—1st, W. Garry; 2nd, G. T. Cattell. Distance, 31 feet 6 inches.

220 *yards Scratch.*—1st, E. K. Fenn-Smith; 2nd, J. A. Craft; 3rd, E. W. Atterbury. Time, 24 seconds.

Drop Kick.—1st, T. Howells; 2nd, G. K. Fenn-Smith.

One Mile Scratch.—1st, H. Hay Barclay; 2nd, E. Williamson; 3rd, V. B. Jones. Time, 5 minutes 29 seconds.

High Jump.—1st, R. E. S. Tuckey; 2nd, G. K. Fenn-Smith. Height, 5 feet 3 inches.

440 *yards Scratch.*—1st, E. K. Fenn-Smith; 2nd, J. A. Craft. Time, 63⅗ seconds.

Three Mile Scratch.—1st, H. Hay-Barclay; 2nd, L. Boucher. Time, 18 minutes 42⅘ seconds.

Three-Legged Race.—1st, Burgon and Ward; 2nd, Pattison and Morris.

Inter-Class Relay Race.—1st, Class B.

Ladies' Race (the College Oaks).—1st, Miss Baji.

Staff Race.—1st, Professor G. H. Wooldridge; 2nd, Professor E. B. Reynolds.

Tug-of-War.—1st, Class D.

College Derby.—1st, E. G. Conisbee; 2nd, P. Emson.

Fancy Costume Parade.—1st, E. B. Thompson (Gay Cavalier); 2nd, E. G. Conisbee (Coster).

Notes and News.

The Editor will be glad to receive items of professional interest for these columns.

Foot-and-Mouth Disease.

COMMITTEE INQUIRY IN EDINBURGH.

A committee, whose members are the Right Hon. E. G. Pretyman, M.P.; Sir E. Douglas Newton, K.B.E., M.P.; Professor John Penberthy, and Messrs. A. Batchelor, David Ferrie, F. W. Garnett, C.B.E.; H. German, Wm. Graham, Alfred Mansell, and W. R. Smith, and which has been appointed at the instance of the Ministry of Agriculture and Fisheries, met recently in the Board Room of the Scottish Board of Agriculture, Edinburgh, to inquire into the origin and circumstances of the recent outbreak of foot-and-mouth disease in Scotland and into the policy and procedure which was pursued in dealing with the disease; and to report whether any alteration of the method of administrative control hitherto adopted, or any amendment of the existing law, is necessary or desirable.

Captain Pretyman presided, and Mr. S. A. Piggott, of the Ministry of Agriculture and Fisheries, acted as secretary to the Committee.

The following witnesses from various Local Authorities gave evidence:—Mr. W. Crichton (Midlothian), Mr. W. Henderson and Mr. R. Inglis (Perth), Mr. M'Combie (Aberdeen), Mr. A. Gofton (Edinburgh), and Mr. A. Trotter (Glasgow).

The Committee sat again on the following day, when the witnesses included:—Mr. W. J. Young (Ministry of Agriculture), Mr. J. S. Johnston and Mr. J. Stormonth Darling (Roxburgh), Mr. J. Elliot (Selkirk), Mr. D. Lees and Mr. J. M Smith (Fife), Mr. Russell (Paisley), Mr. S. G. Fraser (Dundee), Lieut.-Col. Forbes, Mr. D. M'Laren, and Mr. T. C. Lindsey (National Farmers' Union of Scotland), and Mr. T. Elder (East Lothian).

OUTBREAK AMONG PIGS.

An outbreak of foot-and-mouth disease was recently discovered among pigs at Birmingham market, and all movement of stock within a radius of fifteen miles of Birmingham was immediately prohibited. The Ministry suggests that possibly the disease may be lurking amongst other pigs in undiscovered centres of infection, and pig owners are therefore urged to examine their stock carefully in order to ascertain whether any suspicious symptoms exist among their herds. All restrictions have now been withdrawn from the Driffield (East Yorks) district, and from the greater part of the West Riding.

During the two weeks ended the 18th June, eight outbreaks of Foot-and-Mouth Disease on fresh premises have been discovered. Four of these were in pigs in the Birmingham Scheduled District, the other four being in the Rochdale Scheduled District.

With regard to the Birmingham outbreaks, the first, confirmed on 9th June, was at Montague Street Pig Market, in 18 pigs, and necessitated the imposition of an Order prohibiting movement of cattle, sheep, and swine, over an area of 15 miles radius around Birmingham. The other outbreaks were found to be sub-

sidiary to this and to be in pigs moved from the Montague Street Pig Market, or in animals which had contracted the disease from such pigs. All pigs on infected premises were slaughtered as soon as possible to prevent further spread of infection.

In the Rochdale series, the first, confirmed on the 14th June, was in a stock of 21 cattle and 43 pigs, and occurred on premises which had previously been infected on 7th February and freed on the 10th April. The tracing of animals known to have been in contact with the stock has not, so far, revealed the source of infection. The second outbreak was at Middleton, near Manchester, on premises occupied by the same owner as in the Rochdale case. Infection was traced to this owner's Rochdale premises. The third outbreak was at Rochdale, and appears to have had its source in the same owner's premises. The fourth outbreak was in the Manchester Pig Market, the origin of which has not yet been traced. The stock on the infected premises have in each case been slaughtered.

On the 19th June an outbreak of the disease was discovered on a farm at Bakewell, amongst a total stock of 118 cattle, 101 sheep, and 5 pigs. It has been ascertained that the infection was brought by a dealer from the Salford Market, into which it was introduced by means of cattle from Rochdale. It is hoped that the prompt application of restrictions in the Rochdale area, which includes Salford and Manchester, may prevent any widespread distribution of the disease.

It should be remembered that these sporadic outbreaks come in the wake of the very serious incursion of disease which was discovered in the North of England in January last, and that they are no more than are reasonably to be expected, having regard to the magnitude of the original outbreak. Between the 23rd January and the 5th February last, the disease was found to exist on no less than 372 premises in Great Britain.

Medicine Too "Scientific"?

The medical correspondent of *The Times* alleges the subservience of the practical to the academically scientific aspect of medicine in the following terms:—

"The disappearance of the 'doctor,' as opposed to the exponent of laboratory methods, is causing as much uneasiness in America as in this country. *The New York Medical Journal* devotes considerable space to the subject and quotes with enthusiasm a recent speech of President Butler, of Columbia University, one of the most progressive medical schools in the world. President Butler declared:—

"'The true aim of the medical school should be to give instruction in fundamental principles and methods, to bring the student into contact with realities, to train him in habits of observation and inference. . . . It would be a sorry day for the public health and for the public satisfaction if the physician of large practical experience, wide human sympathy, and keen insight into human nature were to yield his place to the expert with the microscope and the test tube. The scientific aspects of medicine must not be permitted to override its human aspects."

"Dr. Butler, says the American journal, 'has put into words a feeling which is prevalent throughout a large portion of the medical profession.' The truth is that an immense abuse of the word 'science' has been taking place. Attempting to reduce medicine to terms of chemistry or physics is not scientific at all, because medicine itself is a science, independent and separate. Its methods are not those of the laboratory, though it may and does use the laboratory, in the course of the pursuit of its own ends. 'The leaders in medical education,' to quote further from the same source, 'have made the mistake of trying to combine the laboratory specialist with the general practitioner, and as a consequence the public has suffered and is suffering from a dearth of doctors.'"

To Eradicate Sheep Scab.

The Royal Agricultural Society of England have for years been persistent with the Ministry of Agriculture in urging the eradication of sheep scab. With the increased number of outbreaks of late, the Society recently sent a deputation to the Ministry, who, in response to the representations, have replied by letter. The Ministry point out that their amended 1920 plan has not been long enough in operation to attain the object aimed at, and further, that they have not had sufficient powers to compel owners to act, in addition to which they have not been supported by magistrates in dealing with delinquents. With these points in mind the Minister has made the following proposals, which have been approved by the Council of the R.A.S.E. at their last meeting:—That the Ministry should circulate to the widest possible extent its pamphlets dealing with the best methods of curing and eradicating scab, and that an Order should be made and published at a definite date, the effect of which would be to prescribe that any stockowner having sheep scab in his sheep or selling to any other person sheep infected with scab, should, after, say, two years from the publication of the Order, be liable to a heavy penalty—for instance, say, 3s. a sheep, with a minimum fine of £10—unless he was able to show that he habitually took proper measures to cure and prevent the disease in his animals. The effect of such proposals would be that, whilst the Ministry's existing Orders will continue, the burden of curing and preventing sheep scab would be placed directly on the sheep-owner concerned.

New Milk Bill.

Sir Alfred Mond, Minister of Health, will shortly introduce a Bill to postpone the operation of the Milk and Dairies Act of 1915, which otherwise would automatically come into operation next September. We learn, says the *Farmers' Gazette*, that the new Bill will provide for the issue of certificates by the central authority in respect of grade A certified milk, the conditions to be complied with being much the same as those at present in force with regard to such milk. Amongst other things, the cows will be subjected to the tuberculin test. Regulations for selling

grade A milk will be issued by the central authority to local authorities, who will grant certificates; and in the case of this milk no tuberculin test will be necessary, but there will be a count of bacteria. The Bill will also deal with pasteurised milk. This it will require to be dealt with by the Holding and not by the Flash process. There is nothing to prevent milk being sold without these certificates, but where this is done consumers will know that they are buying without any warranty. Another clause in the Bill renders liable to a heavy penalty any person who sells milk from a cow with a tuberculous udder, knowing that the cow is tuberculous.

Minister of Agriculture and Grass Disease.

In the House of Commons, Sir Hy. Cowan (East Aberdeenshire) asked the Minister of Agriculture whether his attention had been called to an outbreak of grass sickness among horses in Aberdeenshire, through which many horses had already died; whether a vaccine which had been successfully employed in combating this disease had been distributed in the counties of Forfar, Perth, and Kincardine, and what steps he proposed to take to secure similar and immediate distribution to farmers in the county of Aberdeen, where this vaccine was at present unobtainable.

The Minister of Agriculture (Sir A. Griffith-Boscawen)—I am informed that a disease of horses called grass sickness has existed for several years in Aberdeenshire and other parts of Scotland, and that many horses have died of the disease. I understand that an attempt has been made to prepare a serum against this disease, but I am advised that its use is still in an experimental stage, and its efficacy not yet established. It is not the function of the Ministry to deal with non-scheduled districts in Scotland, that being a function which has been allocated to the Scottish Board of Agriculture.

Sir Hy. Cowan—Is the Minister aware that this disease has only recently appeared for the first time in the county of Aberdeen, and will he consider the question as to whether the disease shall be made a notifiable one, in view of the fact that it is now spreading to an alarming extent, and in almost every case it is fatal?

The Minister of Agriculture—This is not one of the scheduled diseases which fall within the purview of the Ministry of Agriculture, and I suggest that the hon. member should address further questions on the subject to the Secretary for Scotland.

Major Howard (Sudbury) asked if the Minister would consider closing the border against Scottish horses so as to secure the safety of horses south of the Tweed, in view of the foot-and-mouth disease that had been imported from Ireland. (Laughter.)

The Minister of Agriculture said he must have notice of that question.

Army Veterinary School.

It is officially stated that, in addition to captains and majors of the Royal Army Veterinary Corps, all other officers of that Corps may, by permission of the Director-General, Army Veterinary Service, attend the Royal Army Veterinary School, Aldershot, either for instruction or to work in the laboratories. There will also be courses of instruction lasting six months for training non-commissioned officers and men of the Royal Army Veterinary Corps as laboratory assistants, in addition to the ordinary courses of instruction for non-commissioned officers in animal management and hygiene.

The allotment of vacancies in the School for competent officers and non-commissioned officers will be made by commands, who will be notified by the Royal Army Veterinary School of the vacancies available for each Command three months in advance of classes.

Mr. J. Garvie Succumbs.

We regret to announce the death at Montrose, on Sunday, June 18th, of Mr. Joseph Garvie, M.R.C.V.S. A few weeks ago, as reported in the *Record*, while Mr. Garvie was attending to his professional duties at the farm of Nether Dysart, near Montrose, he was attacked by a British Friesian cow, and sustained severe internal injuries to which he has succumbed. About 30 years ago, Mr. Garvie, on the completion of his training at the Royal "Dick" Veterinary College, began his professional duties in the Montrose district, where he carried on a successful practice, and his untimely death at the comparatively early age of 54 is deplored.

Exportation of Horses to the Continent.

When so much is being said in the Press upon the subject of the traffic in live horses between this country and the Continent, it is interesting to read an account which occurs in the *North British Agriculturist* of the 18th May last by an observer who sailed recently in the S.S. "Crichtoun" with 18 horses from Leith to Antwerp. He says that the horses, after a quiet and comfortable journey, with plenty of food and water, walked with docility into the boxes which landed them by crane on the quay, and were got ashore with extraordinary rapidity. He details the methods of protection in transit; how the horses are shipped in boxes with ribbed floors, doors front and back, and placed in stalls on the main deck level, protected from the weather; how each horse is fitted with a stout leather helmet, padded with felt to prevent it from injuring its head during the passage; how the animals are watered three times a day and supplied with abundance of fodder, the issue of which is on the generous scale. He says that "to look into the stalls and smell the sweet hay and see the horses so obviously contented is to finally disabuse the mind of any notion of suspicion that the animals are being dealt with on hard lines. Even when the ship begins to roll and pitch a bit they are as comfortable as human beings. They stand athwart the ship with padded bars at each side. Their helmets save their heads, and the indiarubber padding of the metal work in their rear keeps all safe in that quarter. Once in a while in rough weather a horse may fall. Then sailors are just the kind of men to deal with any such emergency and soon set things right."

On the quay, were representatives of the Belgian Prevention of Cruelty to Animals Society, who accompanied the Belgian veterinary surgeon in his examination of the horses. Some of the younger animals were purchased for working purposes, while others were bought for the abattoirs.

The writer prefaces his remarks with a statement in which he recounts the change which has come over the traffic in recent years in consequence of the altered requirements of the Ministry of Agriculture. Now, no horse can be exported from the country unless it is certified as sound, able to work, and able, through general physical conditions, to stand a sea-voyage. All "knackery" work is done in this country and the dead meat, properly dressed and hung in ventilated crates, is exported. He bears testimony to

the fact that the trade is not conducted on haphazard lines, but is well organised. Agents, working on a commission basis, attend every horse fair in the country ready to purchase animals in demand by their principals on the Continent.

Vessels are thoroughly well fitted for the traffic, and all the horses submitted are subject to careful examination at the port by qualified veterinary surgeons and are rejected unless really fit and sound.—*Ministry of Agriculture and Fisheries.*

We are pleased to hear that Mr. J. W. McIntosh is recovering from his very severe illness, and are sure that our readers will join with us in wishing him a speedy restoration to health.

Personal.

Colonel A. SMITH, F.R.C.V.S., Principal of Bengal Veterinary College, Calcutta, is home on leave, his address being Eversley Hotel, Seaford, Sussex.

Mr. J. W. McIntosh desires to thank his colleagues and friends for their sympathy and kind enquiries during his illness. He hopes to thank them personally in the near future.

Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

M. O. H. Meat Inspection Circulars.

Sir,—Concerning the circulars on meat inspection sent out recently by the Ministry of Health, many of the suggestions contained in them are no doubt excellent, but they are recommendations, and not, as Dr. Turner, M.O.H., implied when speaking at the meeting of the Central Veterinary Society (reported in the *Record* last Saturday) orders. Some Local Authorities will carry them out and some will not. As meat inspection is now carried out, it is very unfair to the large firms who try to keep everything up-to-date, and see that no injurious or diseased food is sent out from their factories. In many places little or no inspection is carried out, the Sanitary Inspector or M.O.H. only calling now and then. The circular letter above referred to agrees with this. I should like to ask the opinion of the veterinary meat inspectors as to the recommendation that the head, including the tongue, of all cattle and pigs showing any trace of tuberculosis in the glands should be destroyed. Many people do not realise the number of heads, especially of pigs, that are affected, some of them very slightly. We are advised in the circular, if the disease is localised in the neck or other part of the body, to remove that part only. Why draw this line of demarcation between the head and neck? To my mind when we get slight caseous or calcified deposit in one, or possibly in two, of the lymphatic glands of the head, and we destroy the whole of that head and tongue, there is a great waste of good food. If these deposits were cut out, and the heads pickled and then cooked, it is certain there would be no danger from them. With every respect to the Ministry of Health, are they not shutting their eyes to the fact that the danger of tuberculosis being got through food is *not from meat*, especially when cooked, *but from uncooked milk*. By all means destroy the whole of any animal affected with generalised tuberculosis; but why the head should be condemned and the diseased glands only removed from other parts of the body I fail to see. I trust those who have had greater experience will give it on this point. Is it not probable that the lesions due to actinomyces are often mistaken for tuberculous ones? Yours faithfully, JAS. BLAKEWAY, M.R.C.V.S.

Stourbridge, *June 17th*, 1922.

R.C.V.S. Council Election.

Sir,—Will you kindly permit me once again through the medium of the *Record* to express my warmest thanks to the 773 Fellows and members of the College who did me the honour of voting for me at the recent Council election and returning me as one of their representatives.

As hitherto, I shall endeavour to the best of my ability to carry out the duties entrusted to me in such a manner as I trust will meet with the approbation of my supporters and of the profession generally.—Yours faithfully, JOSEPH ABSON.

Norfolk Street, Sheffield.

Sir,—Kindly allow me, through the columns of the *Record*, to convey my thanks to the Fellows and Members that recorded their votes in my favour and thus placed me on the Council. It will be my earnest endeavour to merit their confidence by doing all in my power to promote the best interests of my profession.—Yours faithfully, RICHARD HUGHES.

Glentworth, Oswestry, June 24th, 1922.

Sir,—On opening my *Record* to-day I was filled with astonishment not unmixed with disgust at the wanton and deliberate insult that has been offered to the profession in Ireland by the rejection of Mr. Howard from the Council of the Royal College of Veterinary Surgeons.

We in Ireland have made few claims on the attention of the Council or the profession in England. We have endeavoured, as far as we could, to work out our own salvation here, in our own way, and to support every movement that made for progress, no matter where or by whom it was instituted. We have lived up to the level of that great argument that labours to maintain the dignity of the profession and elevate it to the highest plane.

Numerically we occupy, in the ranks of the profession, respectable proportions—yet we are deliberately denied the poor consolation of having a single representative on the body that is entitled to speak on behalf of the profession.

This insult to the intelligence of the profession in Ireland is considerable, but it becomes intensified when offered to the person who is held, and deservedly held, in high esteem by all who value sincerity, honesty, and devotion to the cause he has at heart.

Is the number of attendances a man puts in at meetings to be the measure of his ability and capacity for work? It's a far cry from the County Clare to Red Lion Square, and takes a lot of enthusiasm and ready cash to cover the ground, considering that Mr. Howard, out of his personal purse, without either sympathy or support from any quarter, has for years borne the expense without complaint. This is a test that few would endure for long.

It may be that by directing attention to this matter I lay myself open to the somewhat cheap and time-honoured jibe of it being "another injustice to Ireland," but I can afford to let that pass.

What really matters is that the rejection of the only Irish representative on the Council has touched a thorn that has long lain deep in the minds of the profession here, and may not lead to any good result.

It lets in a strong light on the corroding and sinister influences which appear to operate amongst a considerable number of the profession in England with regard to anything relating to the affairs of this country, and which professional chivalry is powerless to neutralise or destroy.

This impression may inspire Irishmen to take their professional destinies in their own hands, and ask themselves if that good old principle of English Constitutional Law still obtains, that there can be no Taxation without Representation.—I am, Sir, yours faithfully, JOHN J. KELLY, M.R.C.V.S.

Dublin, *June 17th*.

Mid-West and South Wales V.A.

Sir,—Will you kindly insert enclosed items of the amount of £8 10s. 6d. paid to Mr. W. M. Scott, F.R.C.V-S., Bridgwater, shown on our balance sheet for the year ending April, 1922, recently published in the *Record*, receipts for which I hold.

1920.		£	s.	d.
Nov. 17th	John Whitby and Sons, Ltd., Bridgwater :—			
	Printing 150 Post Cards ...	0	10	0
	Printing 150 Circulars ...	0	14	6
	Postage, Letters and Reply Post Cards	1	5	6
1921.				
Aug. 23rd	F. H. Kight, Bridgwater :— Circulars and Envelopes ...	1	18	0
Oct. 21st	Circulars and Envelopes ...	1	0	0
Sept. 9th	The *Mercury* Office, Bridgwater :— To supplying report of meeting of Mid-West and South Wales V. A. at Bridgwater	3	3	0
"		£8	10	6

And oblige, yours truly, J. J. AVESTON, *Hon. Treas.*
June 19th, 1922.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaught'd as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended 17th June, 1922 ...	...	...	2	2	6	134	...	...	21	22	1	36	8
Corresponding Week in 1921	2	...	4	8	1	2	...	2	37	60	...	31	16
Corresponding Week in 1920	...	...	4	4	7	1082	...	...	91	139	...	49	18
Corresponding Week in 1919	5	...	...	...	...	...	1	1	89	188	...	61	20
Total for 24 weeks, 1922 ...	1	...	278	305	1113	54201	...	...	715	1057	410	586	214
Corresponding period in 1921	21	1	279	335	41	2888	5	11	1430	2218	382	627	187
Corresponding period in 1920	4	...	215	250	53	4530	9	16	2577	4418	285	1104	418
Corresponding period in 1919	109	3	91	121	19	1033	14	40	3256	6381	213	850	345

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.													
									Outbreaks				
Week ended 17th June, 1922...		...	...	...	...	...	...	...		1	1	17	
Corresponding Week in	1921 ...	...	...	...	10	...	...	3		2	3	12	
	1920 ...	...	..	...	...	..	...	1		1	1	2	
	1919 ...	...	...	...	...	...	...	8		2	...	...	
Total for 24 weeks, 1922		1	1	...	...	...	...	61		125	140	783	
Corresponding period in	1921 ...	...	...	7	72	...	...	46		136	36	222	
	1920 ...	1	1	...	...	1	3	70		149	5	18	
	1919 ...	...	...	...	...	1	1	87		152	18	60	

NOTE.—The figures for the current year are approximate only.

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